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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,275	03/25/2004	Philippe Fessou	251091US41	5085
22850	7590	12/30/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			HANAN, DEVIN J	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/808,275

Applicant(s)

FESSOU ET AL.

Examiner

Devin Hanan

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 12/9/2005 have been fully considered but they are not persuasive. The applicant asserts that the instant application is different from the Decker et al. reference because Decker et al. only has bends 78 on the leading and trailing edges (page 7 paragraph 6). The limitation of having bends or slopes in regions other than the leading and trailing edge regions cannot be found in claim 1 of the instant application. The airfoil of Decker et al. can be seen to have slopes in regions other than just the leading a trailing edges (note figure 6). On the left side of the vane in figure 6 (the suction side) it can be seen that there is a surface in the intermediate section of the vane which is aligned with the radial axis. There are portions above and below this surface which are seen to have different slopes as claimed in claim 1.

Applicant's arguments with respect to claims 9 and 10 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Decker et al. (U.S. Patent 6,554,569).

Decker et al. discloses a nozzle vane (abstract) for a rotary disk of a turbomachine, the vane presenting mutually orthogonal longitudinal (along turbine axis of rotation, 12), tangential (circumferentially around axis of rotation), and radial axes (radially out from axis of rotation), and having pressure side and suction side (col. 4 line 36) surfaces extending radially between a base (32) and a tip (31), and longitudinally between a leading edge and a trailing edge, and a plurality of vane sections having centers of gravity in alignment along a stacking axis, said vane presenting a lower portion, an intermediate portion, and an upper portion, said lower portion extending radially between the base of the vane and a lower limit of the intermediate portion, and said upper portion extending radially between an upper limit of the intermediate portion and the tip of the vane, wherein the stacking axis presents, in the lower and upper portions, a tangential component that is substantially radial (upper and lower portions are substantially radial), and in the intermediate portion, a tangential component having two slopes (figures 6 and 7 show two slopes in the intermediate section,, resulting bend is 78).

Regarding claim 2, Decker et al. discloses all of the above claims elements from claim 1 and a tangential component of the stacking axis, in said intermediate portion, comprises a first slope in the direction opposite to the direction of rotation of the disk, and a second slope in the direction of rotation of said disk (figures 6 and 7 show two slopes in the intermediate section).

Regarding claim 3, Decker et al. discloses all of the above claims elements from claim 2 and a first slope presents an angle of inclination with respect to the radial direction lying in the range 5 degrees to 45 degrees (first slope lies in the range and is angled on opposite side of tangential axis when compared to the second slope).

Regarding claim 4, Decker et al. discloses all of the above claims elements from claim 2 and a second slope presents an angle of inclination with respect to the radial direction lying in the range 5 degrees to 45 degrees (second slope lies in the range and is angled on opposite side of tangential axis when compared to the first slope).

Regarding claim 5, Decker et al. discloses all of the above claims elements from claim 2 and a first slope that extends radially between the lower limit of the intermediate portion and a bend point (78) situated between the lower and upper limits of said intermediate portion, and said second slope extends radially between said bend point (78) and said upper limit.

Regarding claim 6, Decker et al. discloses all of the above claims elements from claim 5 and the tangential component of the stacking axis of the intermediate portion occupies a radial height lying in the range 35% to 65% of a total radial height between the base and the tip of said vane (sloped portions cover the range).

Regarding claim 7, Decker et al. discloses all of the above claims elements from claim 1 and the tangential component of the stacking axis of the lower portion occupies a radial height lying in the range 10% to 25% of a total radial height between the base and the tip of said vane (substantially radial portion extends approximately 10 percent of the height at the lower portion next to base 32).

Regarding claim 8, Decker et al. discloses all of the above claims elements from claim 1 and a tangential component of the stacking axis of the upper portion occupies a radial height lying in the range 10% to 25% of a total radial height between the base and the tip of said vane (substantially radial portion extends approximately 10 percent of the height of the upper portion next to tip 31).

Regarding claim 11, Decker et al. discloses all of the above claimed limitations in the rejection of claim 1 above and discloses the two sloped create a C-shaped form (figure 6).

Regarding claim 12, Decker et al. discloses all of the claimed limitations in the rejection of claim 2 above.

Regarding claim 13, Decker et al. discloses all of the claimed limitations in the rejection of claim 3 above.

Regarding claim 14, Decker et al. discloses all of the claimed limitations in the rejection of claim 4 above.

Regarding claim 15, Decker et al. discloses all of the claimed limitations in the rejection of claim 5 above.

Regarding claim 16, Decker et al. discloses all of the claimed limitations in the rejection of claim 6 above.

Regarding claim 17, Decker et al. discloses all of the claimed limitations in the rejection of claim 7 above.

Regarding claim 18, Decker et al. discloses all of the claimed limitations in the rejection of claim 8 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-10 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Decker et al. in view of Liu et al. (U.S. Patent 6,508,630).

Regarding claims 9-10 and 19-20, Decker et al. does not disclose the upper portion of the vane is connected to the outer shroud of the turbine and the inner portion extends proximate to, but does not connect to the inner shroud.

However, Liu et al. teaches of the upper portion of the vane is connecting to the outer shroud of the turbine (col. 2 lines 54-65) and the inner portion extends proximate to, but not connecting to the inner shroud (fig 2, inner end 44 does not connect to the inner shroud) for the purpose of having the outer casing support the weight of the vanes and lowering the rotating mass of the rotor disk (col. 2 lines 36-44).

Since Decker et al. and Liu et al. are both gas turbine guide vanes, the purpose disclosed by Liu et al. would have been recognized in the pertinent art of Decker et al. It would have been obvious to one having ordinary skill in the art at the time the invention was made to connect the vane of Decker et al. to the outside casing, extend them to the inner shroud, but not connect them to the inner shroud for the purpose of having the outer casing support the weight of the vanes and lowering the rotating mass of the rotor disk (col. 2 lines 36-44).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Prior Art

The patent to Wood et al. (U.S. Patent 6,312,219) is cited for its teaching of another curved nozzle vane, the curve coming from the narrowing of the waist (figure 4).


The patent to Wadia et al. (U.S. Patent 6,195,983) is cited for its teaching of another curved nozzle vane with radial upper and lower portions, although there is only one tangential slope in the intermediate portion (figure 4).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devin Hanan whose telephone number is 571-272-6089. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on 571-272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Devin Hanan
Patent Examiner
Art Unit 3745

Conclusion

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Devin Hanan
Patent Examiner
Art Unit 3745



EDWARD K. LOOK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700

12/23/05